



**CALIFORNIA  
HIGH-SPEED RAIL  
AUTHORITY**

**BRIEFING: May 5, 2011 BOARD MEETING AGENDA ITEM #8**

**TO:** Chairman Pringle and Authority Board Members

**FROM:** Jeff Abercrombie, Regional Director

**DATE:** April 27, 2011

**RE:** Fresno to Bakersfield Section Supplemental Alternatives Analysis

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**Discussion**

The purpose of this agenda item is to summarize the investigation of proposed changes to the Preliminary Alternatives Analysis Report for the Fresno to Bakersfield Section, previously approved at the June 3, 2010, Board Meeting and the Supplemental AA Report issued in September 2010.

The proposed changes relate to the investigation and refinement of alternative alignments throughout the entire Fresno to Bakersfield section as a result of preliminary engineering conducted from September 2010 through April 2011.

**Staff Recommendations**

The staff recommends consideration for the Board to approve the following:

**Fresno Subsection**

- ✓ Change UPRR West elevated profile to at-grade from Clinton to Jensen
- ✓ Add a second station location at Mariposa Street
- ✗ Remove UPRR East and Crossover alternatives from further consideration

**Hanford/Kings County Subsection**

- ✓ Shift existing alignment between Conejo and Corcoran in two locations

**Corcoran Subsection**

- ✓ Add a new at-grade alignment on west side of BNSF through Corcoran
- ✓ Shift Corcoran Bypass alignment closer to Corcoran

**Allensworth Subsection**

- ✓ Shift Allensworth Bypass alignment to the west

**Wasco-Shafter Subsection**

- ✓ Shift alignment closer to BNSF near Kimberlina Road
- ✓ North of Shafter: Change profile from elevated to at-grade
- ✓ South of Shafter: Change profile from elevated to at-grade, and shift alignment from east to west of BNSF
- ✓ Shift Wasco-Shafter Bypass to the east



- ✓ Add new Shafter HMF site west of BNSF

Bakersfield Subsection

- ✓ Change from elevated to at-grade profile from Hageman Road to Palm Avenue

BNSF Right-of-Way

- ✓ Change alignment definitions for all alternatives from “share BNSF right-of-way” to “remain adjacent to BNSF right-of-way”

**Attachments:**

- ✓ Supplemental AA Report Executive Summary



# Fresno-Bakersfield Supplemental AA Report Executive Summary

## Background and Purpose of this Supplemental Alternatives Analysis

This May 2011 Fresno to Bakersfield Supplemental Alternatives Analysis (AA) Report updates the Preliminary AA Report that the California High-Speed Rail Authority (Authority) issued for the Fresno to Bakersfield high-speed train (HST) section in June 2010, and the Supplemental AA Report issued in September 2010. It presents documentation and analysis of modifications made to the alternatives contained in those prior reports, including:

- Additions of new alternatives (alignments, station site, and heavy maintenance facilities),
- Removal of existing alternatives,
- Shifts in the horizontal alignments of alternatives, and
- Changes in profiles of existing alternatives from elevated to at-grade.

These modifications are the result of eight months of development of the alternatives since September 2010 involving preliminary engineering, environmental impact analysis, public and stakeholder input, federal and state environmental agency input, and value engineering (review of engineering designs to identify most cost-effective solutions).

Each of the modifications recommended here is based on one or more of the following benefits:

- Reduced impacts on sensitive natural resources and urban populations,
- Increased benefits to local residents, property owners, and business owners,
- Reduced project and stakeholder costs, and
- A less impacting, more cost-effective project overall.

## Recommendations

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The staff recommends Board approval of the following modifications:

### **Fresno Subsection (Figure ES-1)**

- Change UPRR West Alternative profile from elevated to at-grade from San Joaquin Street to Jensen Avenue. Placing this 2.8-mile section of the project at grade will provide benefits to city residents and property owners in terms of reduced noise and visual impacts, improved traffic flow due to the creation of several road grade separations over the Union Pacific Railroad, and greater freight railroad safety due to the closure of several at-grade crossings. Placing the alignment at grade will enhance the City's ability to integrate the HST station into its plans for the downtown, as well as reduce overall life cycle costs for the HST project and for local stakeholders.
- Add an alternative station location at Mariposa Street. This location is a new alternate to the Kern Street location, which was included in the Preliminary AA Report as the only station location for the western alignment alternative. The City of Fresno believes this site is more consistent with the City's vision for the station area, and will allow the City to establish the HST station as a focal point for its downtown economic development and redevelopment initiatives.
- Remove UPRR East and Crossover Alternatives from further consideration. The UPRR East Alternative parallels the UPRR West Alternative on the east side of the UPRR right-of-way. The Crossover Alternative is a combination of the UPRR West and East Alternatives that requires two crossovers of the UPRR facility. The benefits of removing these alternatives mirror those associated with the changing the western alignment from elevated to at-grade. In addition, removal of the eastern alignment has the added benefits of



eliminating direct impacts to the historic SP Depot and allowing the City additional flexibility in planning for development of the property that otherwise would have been occupied by the HST guideway and structures. Removal of these alternatives has the added benefit of eliminating the need for expensive elevated crossings of the UPRR tracks.

### **Hanford/Kings County Subsection (Figure ES-2)**

- Shift existing alignment between Conejo and Corcoran in two locations. The locations are between Conejo and the proposed Kings-Tulare Regional Station (east of Hanford at SR-198) and again between Idaho Avenue (south of the KTR Station) and Niles Avenue just north of Corcoran. In the case of the northern shift, the new alignment more directly follows property boundaries and the 7½ Avenue utilities corridor which runs north-south through the area. While this shift has the benefit of being less disruptive to agricultural properties and operations (including numerous dairies) and of being more consistent with the Authority's objective of following existing transportation and utility corridors as closely as possible, it does result in displacement of several residential properties in the Lacey Rural Community. The southern shift allows the HST alignment to avoid the Kaweah Delta Water Conservation District's Tulare Lakebed Mitigation Site, which covers approximately 1,300 acres north of Corcoran (east of SR-43 and north of Nevada Avenue), as well as approximately five acres of sensitive wetlands and other high quality aquatic resources. This shift also avoids key agricultural operations in the area west of SR-43.

### **Corcoran Subsection (Figure ES-3)**

- Add new alternative west of BNSF at grade. This alternative begins at Nevada Avenue north of Corcoran and ends at Quebec Avenue (Avenue 144) south of Corcoran. Placement of this section at grade provides benefits to city residents and property owners in terms of reduced noise and visual impacts, improved traffic flow due to the creation of several road grade separations over the BNSF tracks, and greater freight railroad safety due to the closure of several at-grade crossings. In addition, the HST project and local stakeholders will benefit from a reduction in overall life cycle costs.
- Shift Corcoran Bypass Alternative closer to Corcoran. As a result of the realignment of the Hanford alignment to avoid wetlands and other aquatic resources north of Corcoran, it is possible to shift the Corcoran Bypass Alternative to west, closer to Corcoran. Because of this shift, the bypass is considerably shorter and has less impact on agricultural resources and facilities. Project life cycle costs are lower as well.

### **Allensworth Subsection (Figure ES-4)**

- Shift Allensworth Bypass Alternative to the west. This modification extends from approximately 5 miles north of Allensworth State Historic Park to Taussig Avenue, a total distance of 19.1 miles. This shift allows the alignment to avoid encroachment into sensitive natural resources, including wetlands and endangered species habitat, and reduces impacts on agricultural land and facilities as well.

### **Wasco-Shafter Subsection (Figure ES-5)**

- Shift BNSF Alternative closer to BNSF tracks near Kimberlina Road. This minor shift allows the HST alignment to run closer to the BNSF, thereby largely eliminating "landlocked" property between the two facilities. (BNSF tracks will be shifted closer to the HST alignment in one location as well.) The shifted alignment also avoids important agricultural property and facilities immediately to the east.



- North of Shafter: Change BNSF Alternative profile from elevated to at-grade. The profile change, located between Merced Ave and Fresno Avenue approximately (1.5 miles), results in the addition of two grade separations, thereby improving local traffic flow and freight railroad safety. The change reduces overall life cycle costs as well.
- South of Shafter: Change BNSF Alternative profile from elevated to at-grade, and shift alignment from east to west of BNSF. Modification is situated between Los Angeles Avenue south of Shafter to Hageman Road near Bakersfield, a total length of 9.2 miles. Placement of this section at grade will benefit residents and property owners in terms of reduced noise and visual impacts, improved traffic flow due to the creation of several road grade separations over the BNSF tracks, and greater freight railroad safety due to the closure of several at-grade crossings. Shifting the alignment from the east side to the West side of the BNSF removes conflicts with the Shafter International Trade and Transportation Center and with the Shafter Cemetery. It also reduces the need to move or relocate various BNSF track facilities.
- Shift Wasco-Shafter Bypass Alternative slightly to the east. This realignment permits avoidance of a property eligible for placement on the National Register of Historic Places and on various active oil extraction and storage facilities in the area.
- Add new Shafter candidate heavy maintenance facility (HMF) site west of BNSF. This addition is requested by Kern COG to provide for a competitive HMF site south of Shafter that can be accessed from the shifted alignment on the west side of BNSF. The total area of land required, accessibility to jobs, and traffic impact are similar to those characteristics of the proposed HMF site on the east side of BNSF.

#### **Bakersfield Subsection (Figure ES-6)**

- Change profile from elevated to at-grade between Hageman Road and Palm Avenue. The total length of this modification is 2.3 miles, and applies to both the Bakersfield North and South Alternatives. Changing to an at-grade profile benefits residents and property owners in terms of reduced noise and visual impacts, improved traffic flow due to the creation of several road grade separations over the BNSF tracks, and greater freight railroad safety due to the closure of several at-grade crossings. The HST project and local stakeholders also received a modest benefit in the form of a reduction in life cycle costs.

#### **Use of BNSF Right-of-Way**

- Change alignment definitions for all alternatives from “share BNSF right-of-way” to “remain adjacent to BNSF right-of-way.” Through the Preliminary AA and Supplemental AA reports, it was planned that the HST would share BNSF right-of-way wherever possible to the extent allowed by safety considerations, BNSF business and operations requirements, and infrastructure conflicts. Subsequent discussions with the BNSF and refinement of preliminary designs has resulted in a need to change this approach – namely, to keep the HST outside of BNSF right-of-way, but otherwise remain as close as possible to them.



Figure ES-1. Fresno Subsection

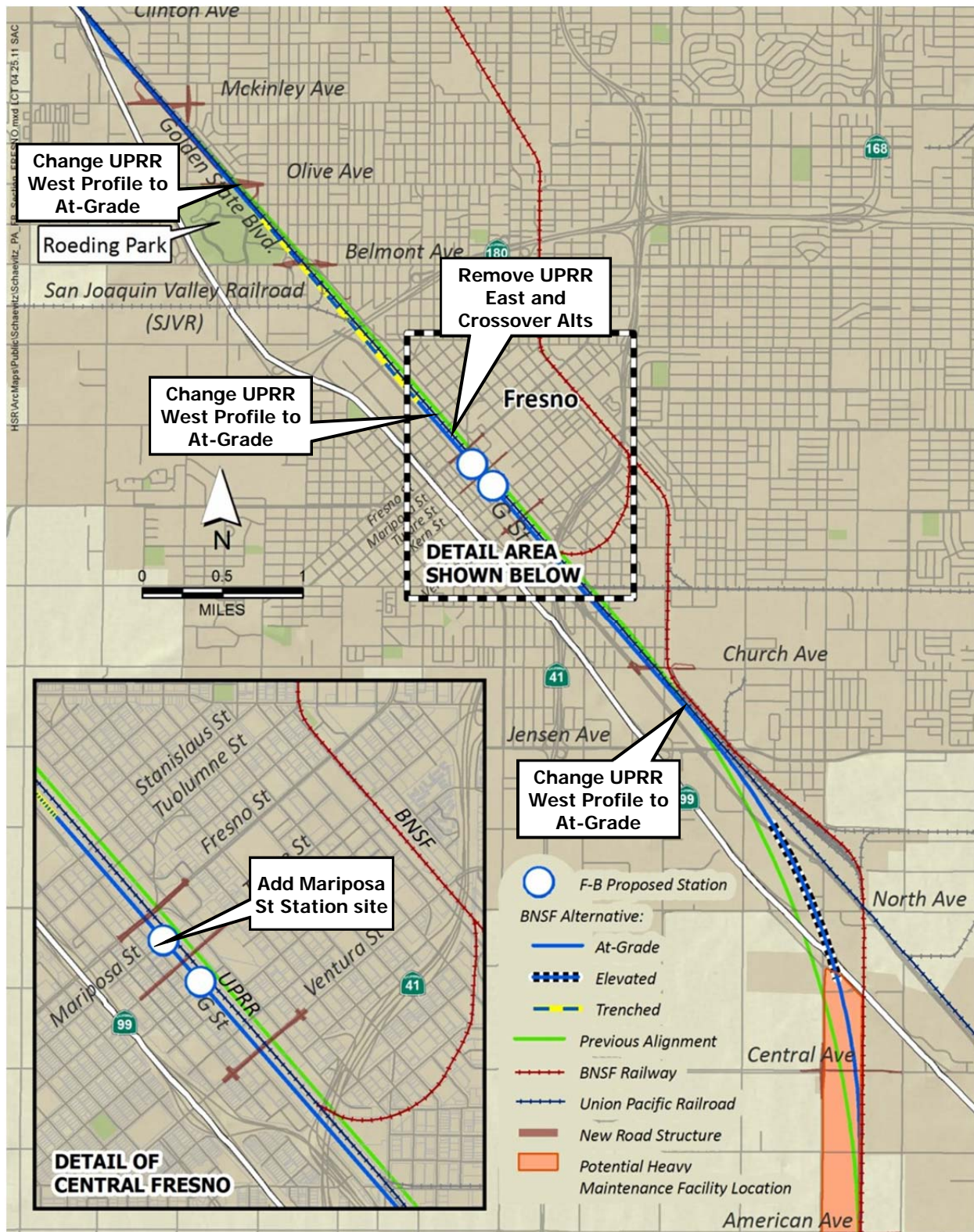




Figure ES-2. Hanford/Kings County Subsection

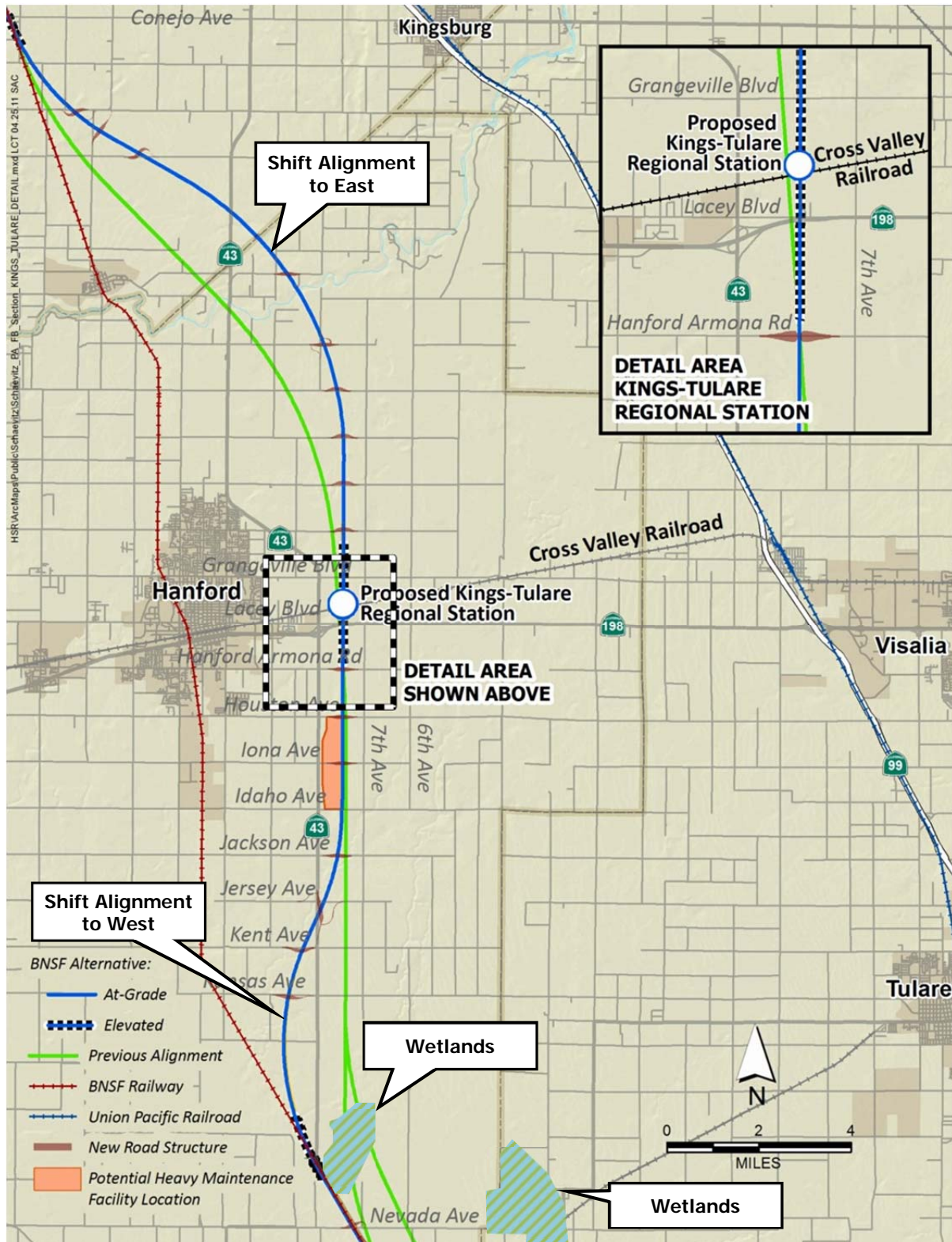




Figure ES-3. Corcoran Subsection

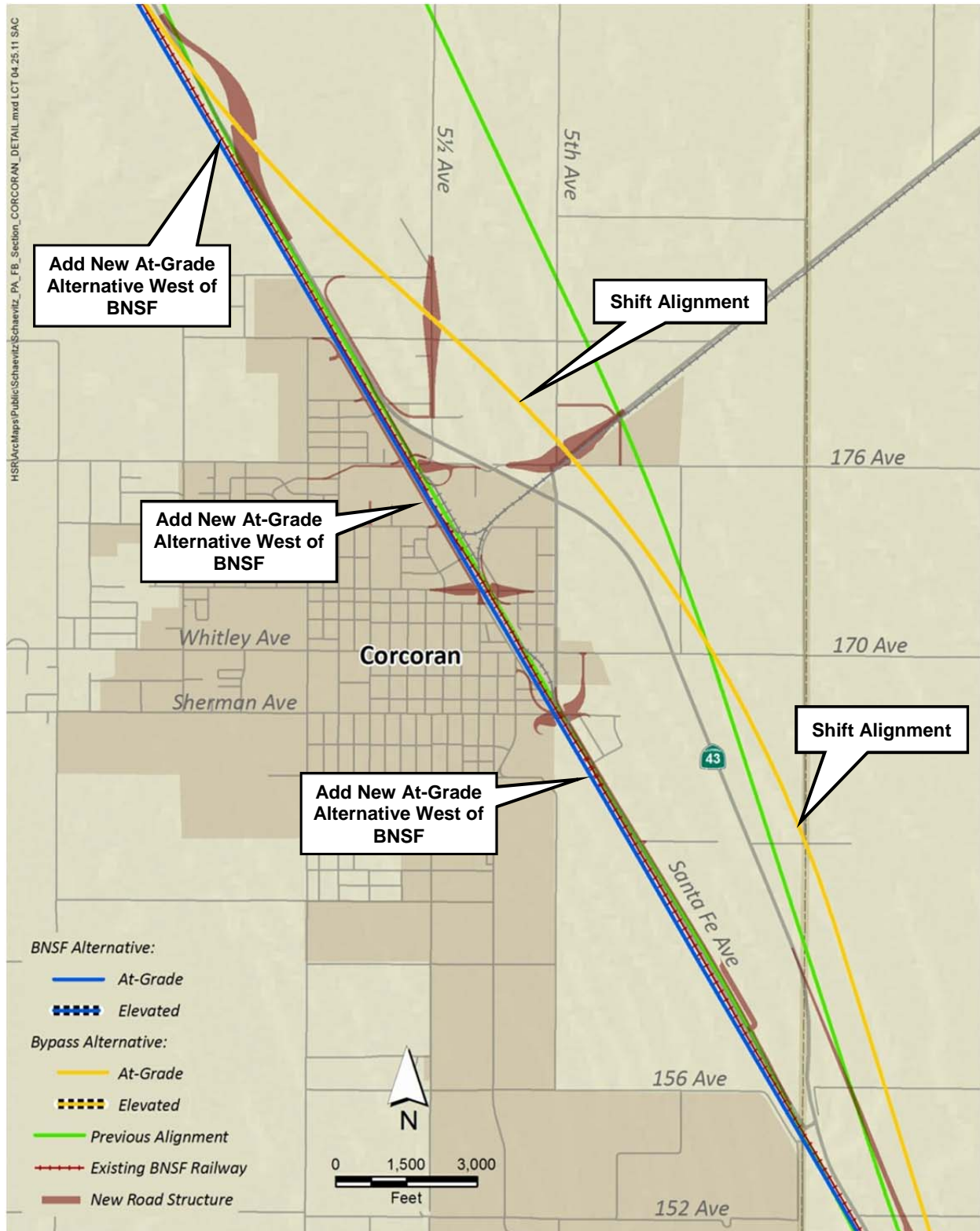




Figure ES-4. Allensworth Subsection

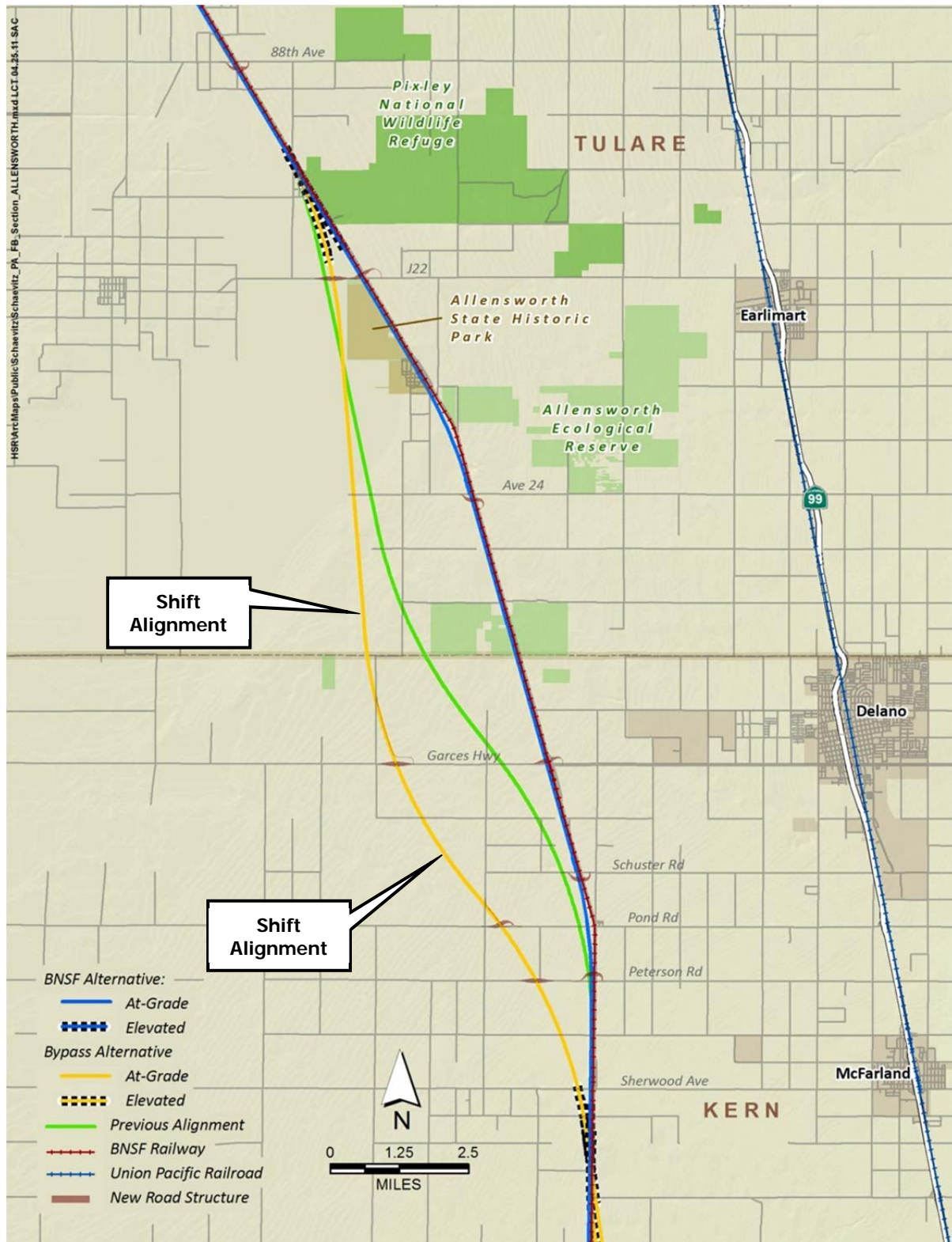




Figure ES-5. Wasco-Shafter Subsection

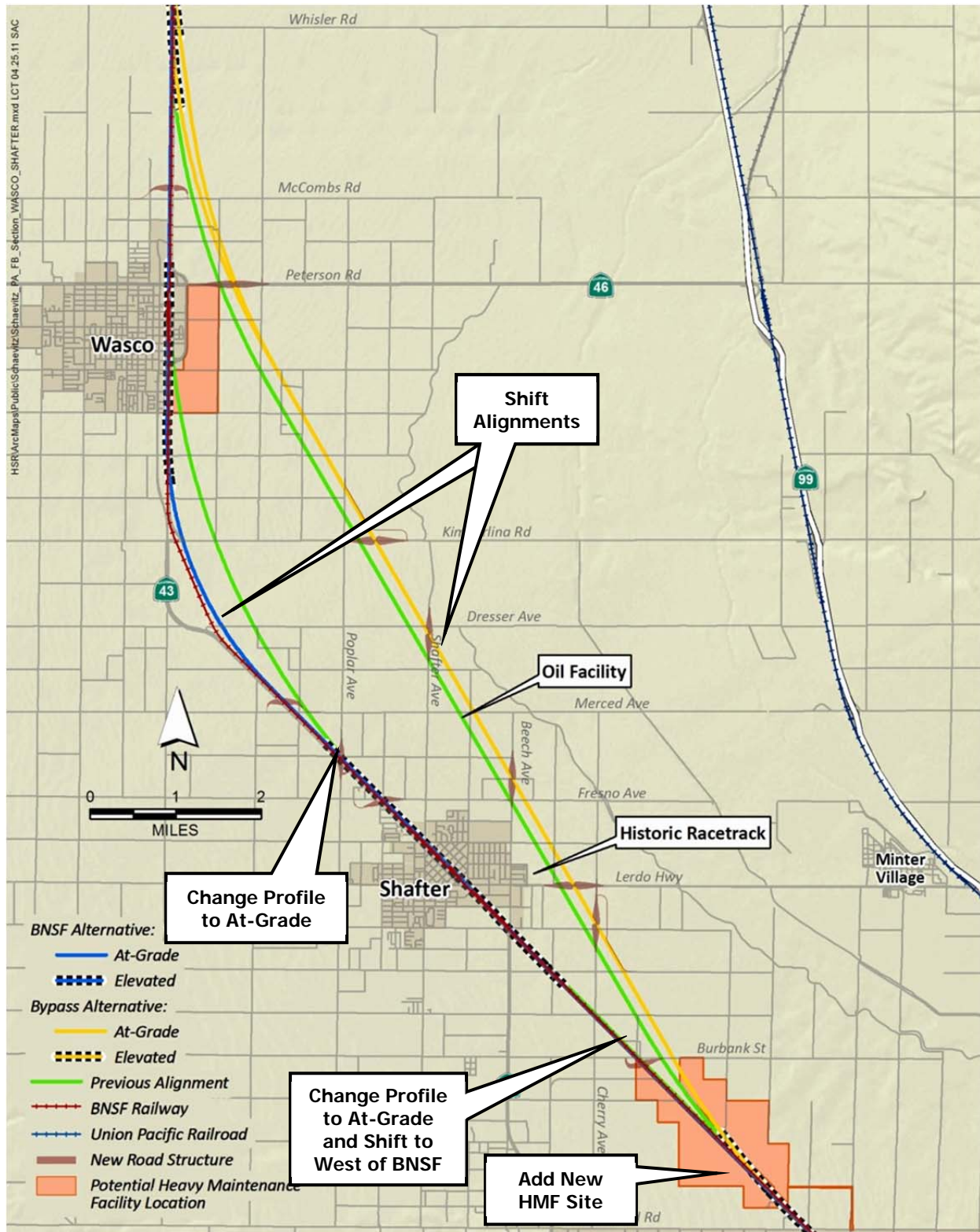




Figure ES-6. Bakersfield Subsection (West Bakersfield Detail)

